**3GPP TSG-CT WG3 Meeting #123e *C3-224168***

**E-meeting, 18th - 26th, August, 2022**

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| *CR-Form-v12.2* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **29.565** | **CR** | **0002** | **rev** | **-** | **Current version:** | **17.0.0** |  |
|  | | | | | | | | |
| *For* [***HE******LP***](http://www.3gpp.org/3G_Specs/CRs.htm#_blank)*on using this form: comprehensive instructions can be found at* [*http://www.3gpp.org/Change-Requests*](http://www.3gpp.org/Change-Requests)*.* | | | | | | | | |
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| ***Proposed change affects:*** | UICC apps |  | ME |  | Radio Access Network |  | Core Network | **X** |

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| ***Title:*** | Correction to 5G access time distribution | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Huawei | | | | | | | | | |
| ***Source to TSG:*** | CT3 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | IIoT | | | | |  | ***Date:*** | | | 2022-08-26 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | F |  | | | | | ***Release:*** | | | Rel-17 |
|  | *Use one of the following categories:* ***F*** *(correction)* ***A*** *(mirror corresponding to a change in an earlier release)* ***B*** *(addition of feature),* ***C*** *(functional modification of feature)* ***D*** *(editorial modification)*  Detailed explanations of the above categories can be found in 3GPP [TR 21.900](http://www.3gpp.org/ftp/Specs/html-info/21900.htm). | | | | | | | | *Use one of the following releases: Rel-8 (Release 8) Rel-9 (Release 9) Rel-10 (Release 10) Rel-11 (Release 11) … Rel-16 (Release 16) Rel-17 (Release 17) Rel-18 (Release 18) Rel-19 (Release 19)* | |
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| ***Reason for change:*** | | The TSCTSF shall calculate the Uu time synchronization error budget before performing the 5G access time distribution. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Add the procedure that the TSCTSF shall calculate the Uu time synchronization error budget when it is provided. | | | | | | | | |
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| ***Consequences if not approved:*** | | The error budget is not correct. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 5.4.2.2.2, 5.4.2.3.2, 5.4.2.4.2 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | |  | **X** | Other core specifications | | | | TS/TR ... CR ... | | |
| ***affected:*** | |  | **X** | Test specifications | | | | TS/TR ... CR ... | | |
| ***(show related CRs)*** | |  | **X** | O&M Specifications | | | | TS/TR ... CR ... | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | | This CR does not impact the OpenAPI file. | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

\* \* \* \* Start of Changes \* \* \* \*

##### 5.4.2.2.2 Creating a new configuration

Figure 5.4.2.2.2-1 illustrates the creation of a configuration.



Figure 5.4.2.2.2-1: Creation of a configuration

To create a configuration, the NF service consumer shall send an HTTP POST message to the TSCTSF to the URI "{apiRoot}/ntsctsf-asti/<apiVersion>/configurations". The HTTP POST message shall include the AccessTimeDistributionData data structure as request body, as shown in figure 5.4.2.2.2-1, step 1. The AccessTimeDistributionData data structure shall include:

- one of the indication of the UEs to which the 5G access stratum time distribution configuration is requested via:

- identification of a list of individual UEs within the "supis" attribute; or

- identification of a group of UE(s) within the "interGrpId" attribute; and

- 5G access stratum time distribution parameters within the "asTimeDisParam" attribute;

Within the "asTimeDisParam" attribute inside the AccessTimeDistributionData data structure, the NF service consumer:

- shall include the "asTimeDisEnabled" attribute set to true if the access stratum time distribution via Uu reference point should be activated (otherwise, if the access stratum time distribution via Uu reference point should be inactive, the "asTimeDisEnabled" attribute may either be omitted or included and set to "false");

- may include the time synchronization error budget within the "timeSyncErrBdgt" attribute;

- may include the temporal validity condition within the "tempValidity" attribute.

Upon receipt of the HTTP request from the NF service consumer, if the request is authorized, the TSCTSF shall:

- if the 5G access stratum time distribution configuration applies to a group of UEs, interact with the UDM to retrieve the list of individual UEs that belong to the group using the Nudm\_SDM service as defined in 3GPP TS 29.503 [24].

- subscribe to event notifications of newly registered PCF for the UE by invoking Nbsf\_Management\_Subscribe Service Operation as defined in 3GPP TS 29.521 [23], if not yet subscribed;

- If the time synchronization error budget is provided, calculate the Uu time synchronization error budget using the provided value; otherwise, calculate the Uu time synchronization error budget using a preconfigured value of a time synchronization error budget;

- interact with the PCF for the UE to provide the configuration information for each target UE using the Npcf\_AMPolicyAuthorization\_Create service operation as defined in 3GPP TS 29.534 [14];

- create a new resource, which represents a new "Individual ASTI Configuration" instance, addressed by a URI as defined in clause 6.1.3.7 and containing a TSCTSF created resource identifier; and

- send an HTTP "201 Created" response with AccessTimeDistributionData data structure as response body and a Location header field containing the URI of the created Individual ASTI Configuration resource, i.e. "{apiRoot}/ntsctsf-asti/<apiVersion>/configurations/{configId}", as shown in figure 5.4.2.2.2-1, step 2.

If the TSCTSF cannot successfully fulfil the received HTTP POST request due to the internal TSCTSF error or due to the error in the HTTP POST request, the TSCTSF shall send the HTTP error response as specified in clause 6.3.7.

\* \* \* \* Next Change \* \* \* \*

##### 5.4.2.3.2 Updating an existing configuration

Figure 5.4.2.3.2-1 illustrates the updating of an existing configuration.



Figure 5.4.2.3.2-1: Update of a configuration

To update a configuration, the NF service consumer shall send an HTTP PUT request to the resource "{apiRoot}/ntsctsf-asti/<apiVersion>/configurations/{configId}" representing an existing "Individual ASTI Configuration" resource, as shown in figure 5.4.2.3.2-1, step 1, to modify the configuration.

The AccessTimeDistributionData data structure provided in the request body shall include an updated representation of the "Individual ASTI Configuration" resource with the updated 5G access stratum time distribution configuration information as defined in clause 5.4.2.2.2.

Upon receipt of the corresponding HTTP PUT message, if the request is authorized, theTSCTSF shall:

- if a time synchronization error budget is provided or updated by the AF, calculate the Uu time synchronization error budget using the provided value; otherwise, calculate the Uu time synchronization error budget using a preconfigured value of a time synchronization error budget.

- interact with the PCF for the UE to provide the updated configuration information using the Npcf\_AMPolicyAuthorization\_Update service operation as defined in 3GPP TS 29.534 [14]; and

- update the existing "Individual ASTI Configuration" resource. Then the TSCTSF shall send a HTTP response including "200 OK" status code with AccessTimeDistributionData data structure or "204 No Content" status code, as shown in figure 5.4.2.3.2-1, step 2.

If the TSCTSF cannot successfully fulfil the received HTTP PUT request due to the internal TSCTSF error or due to the error in the HTTP PUT request, the TSCTSF shall send the HTTP error response as specified in clause 6.3.7.

If the TSCTSF determines the received HTTP PUT request needs to be redirected, the TSCTSF shall send an HTTP redirect response as specified in clause 6.10.9 of 3GPP TS 29.500 [4].

\* \* \* \* Next Change \* \* \* \*

##### 5.4.2.4.2 Delete an existing configuration

Figure 5.4.2.4.2-1 illustrates the deleting of an existing configuration.



Figure 5.4.2.4.2-1: Deletion of a configuration

To delete a configuration, the NF service consumer shall send an HTTP DELETE request to the resource "{apiRoot}/ntsctsf-asti/<apiVersion>/configurations/{configId}" representing an existing "Individual ASTI Configuration" resource, as shown in figure 5.4.2.4.2-1, step 1, to delete the configuration.

Upon the reception of an HTTP DELETE request from the NF service consumer, if the HTTP DELETE request is authorized, the TSCTSF shall:

- interact with the PCF for the UE to remove the configuration information in the PCF by using the Npcf\_AMPolicyAuthorization\_Delete service operation as defined in 3GPP TS 29.534 [14].

- remove the corresponding configuration and respond with "204 No Content" as shown in figure 5.4.2.4.2-1, step 2.

If the TSCTSF cannot successfully fulfil the received HTTP DELETE request due to the internal TSCTSF error or due to the error in the HTTP DELETE request, the TSCTSF shall send the HTTP error response as specified in clause 6.3.7.

If the TSCTSF determines the received HTTP DELETE request needs to be redirected, the TSCTSF shall send an HTTP redirect response as specified in clause 6.10.9 of 3GPP TS 29.500 [4].

\* \* \* \* End of changes \* \* \* \*